

Rev. 16, 5/02

INTEL INVENTION DISCLOSURE
ATTORNEY-CLIENT PRIVILEGED COMMUNICATION
 located at <http://legal.intel.com/patent/index.htm>

RECEIVED
CENTRAL FAX CENTER

OCT 10 2005

DATE: _____

It is important to provide accurate and detailed information on this form. The information will be used to evaluate your invention for possible filing as a patent application. Invention Disclosure forms **MUST** be sent electronically via email to your manager/supervisor who should then forward with their approval to our email account "Invention disclosure submission." If you have any questions, please call 8-264-0444.

Last Name: House		First Name: Colby		M.I. J	
Intel Phone Number: 503-813-8310		Intel Fax Number:		Mailstop: RA1-238	
E-mail address: Colby.j.house@intel.com				WWID: 10638266	
Citizenship: U.S.		Are you a contractor? Yes:		No: X	
Home Address: 2532 NW 4 th Avenue					
City: Hillsboro		State: OR		Zip: 97124	
Corporate Level Group:		Division:		Subdivision:	
Supervisor: Bramblett, Thomas		WWID: 10072287		M/S: RA1-234	
				Phone #: 503-613-2598	

Last Name:		First Name:		M.I.	
Intel Phone Number:		Intel Fax Number:		Mailstop:	
E-mail address:				WWID:	
Citizenship:		Are you a contractor? Yes:		No:	
Home Address:					
City:		State:		Zip:	
Corporate Level Group:		Division:		Subdivision:	
Supervisor:		WWID:		M/S:	
				Phone #:	

Last Name:		First Name:		M.I.	
Intel Phone Number:		Intel Fax Number:		Mailstop:	
E-mail address:				WWID:	
Citizenship:		Are you a contractor? Yes:		No:	
Home Address:					
City:		State:		Zip:	
Corporate Level Group:		Division:		Subdivision:	
Supervisor:		WWID:		M/S:	
				Phone #:	

(PROVIDE SAME INFORMATION AS ABOVE FOR EACH ADDITIONAL INVENTOR)

2. Title of Invention: Motorized slurry arm with or without precision dispense nozzle.

3. What technology/product/process (code name) does your invention relate to (be specific if you can) All technologies using CMP.
--

4. Include several key words to describe the technology area of the invention in addition to #3 above: Slurry dispense, CMP, Thin Films, Motorized, process control
--

5. Stage of development (i.e. % complete, simulations done, test chips if any, etc.): Concept
--

6a. Has a description of your invention been (or planned to be) published outside of Intel: No. If YES, was the manuscript submitted for pre-publication approval through the Author Incentive Program: If YES, please identify the publication and the date published:
--

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6b. Has your invention been used/sold or planned to be used/sold by Intel or others?
Plans pending for possible trial (usage) on site here at Ronler Acres (Intel).
If YES, date it was sold or will be sold:
No.

6c. Does this invention relate to technology that is or will be covered by a SIG (special interest group)/standard or specification?
If YES, name of SIG/standard/specification: N/A

6d. If the invention is embodied in a semiconductor device, actual or anticipated date of tapeout?
N/A

6e. If the invention is software, actual or anticipated date of any beta tests outside Intel:
N/A

7. Was the invention conceived or constructed in collaboration with anyone other than an Intel blue badge employee or in performance of a project involving entities other than Intel (e.g. government, other companies, universities or consortia)? NO: No. If YES, name of individual or entity:

NC

8. Is this invention related to any other invention disclosure that you have recently submitted? If so, please give the title and inventors:
No.

**PLEASE READ AND FOLLOW THE DIRECTIONS ON
HOW TO WRITE A DESCRIPTION OF YOUR INVENTION**

**Try to limit your description to 2-3 pages
Do NOT attach a presentation, white paper, or specification
ANSWER ALL OF THE QUESTIONS BELOW**

Please provide a description of the invention and include the following information:

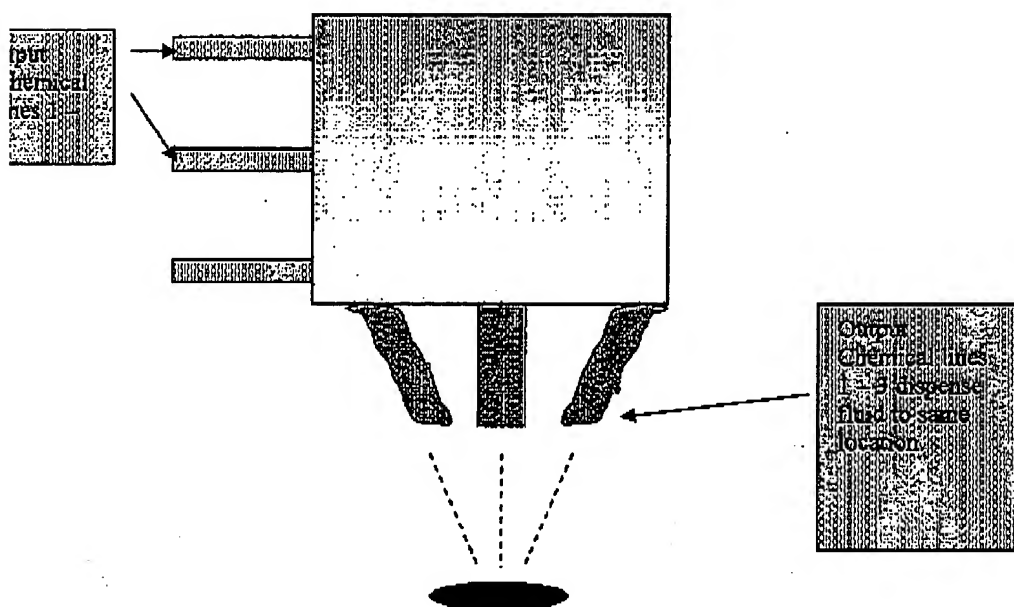
1. **Describe in detail what the components of the invention are and how the invention works.**
The motorized slurry arm is composed of three main components: 1. Motor for modulating slurry arm position. 2. Slurry arm for containment of slurry tubing. 3. Slurry tubing that transports slurry from source.
A stepper motor is attached to the slurry arm so that the arm can be swept precisely in real time. In real time, slurry is distributed in a controlled fashion to the head (i.e. how long slurry is applied, what radius of wafer slurry is distributed to).
The slurry arm can be retrofit onto a current CMP toolset or included in initial tool design. The new slurry arm configuration would also allow distribution of single and/or multiple chemicals to be distributed onto the same point on the polish surface by angling the output lines. The dispense arm is intended for multiple chemical line inputs and precise dispersion onto polish surface.
2. **Describe advantage(s) of your invention over what is currently being done.**
Currently slurry/chemical distribution is provided by a slurry arm that is "fixed" (cannot be controlled in real time). Control of slurry distribution during process would enhance performance and provide more degrees of freedom.

Exhibit I

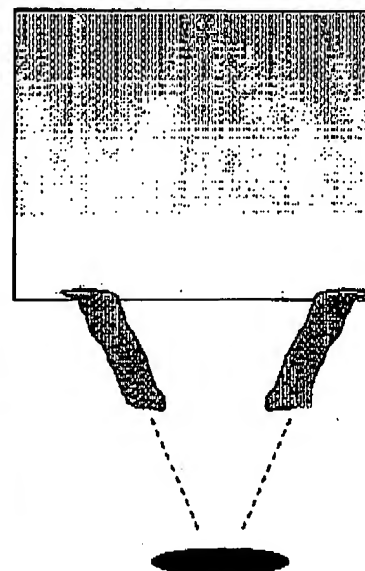
Rev. 16, 5/02

3. You MUST include at least one figure illustrating the invention. If the invention relates to software, include a flowchart or pseudo-code representation of the algorithm.

Side View



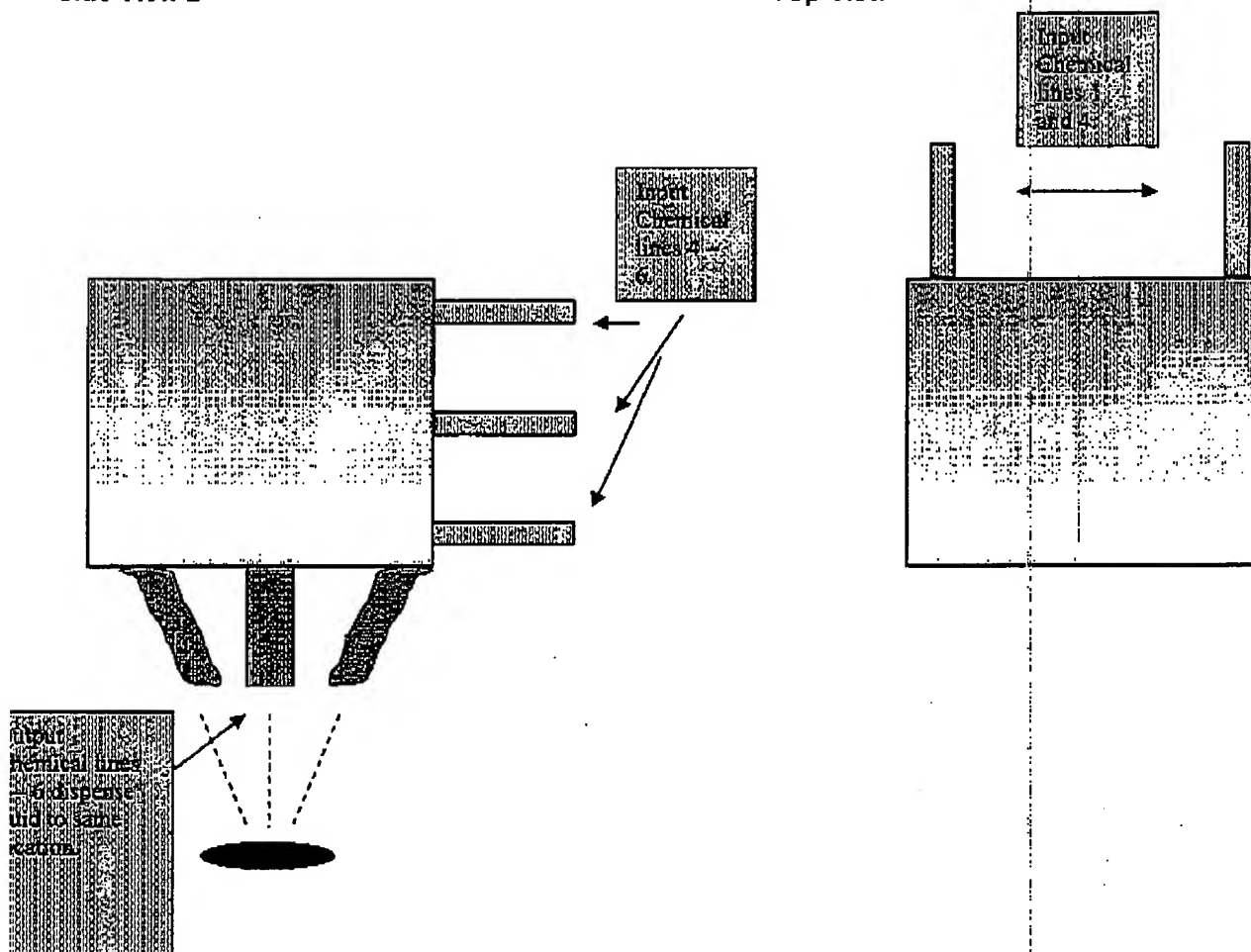
Front View



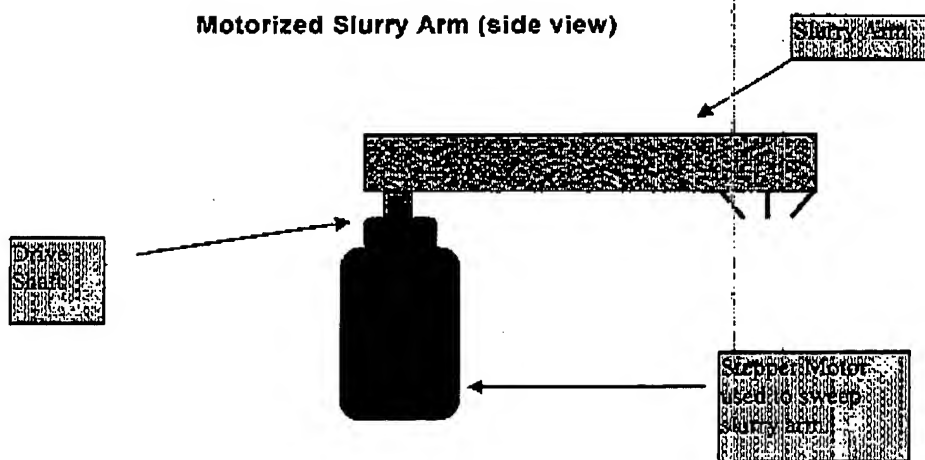
Rev. 16, 5/02

Side View 2

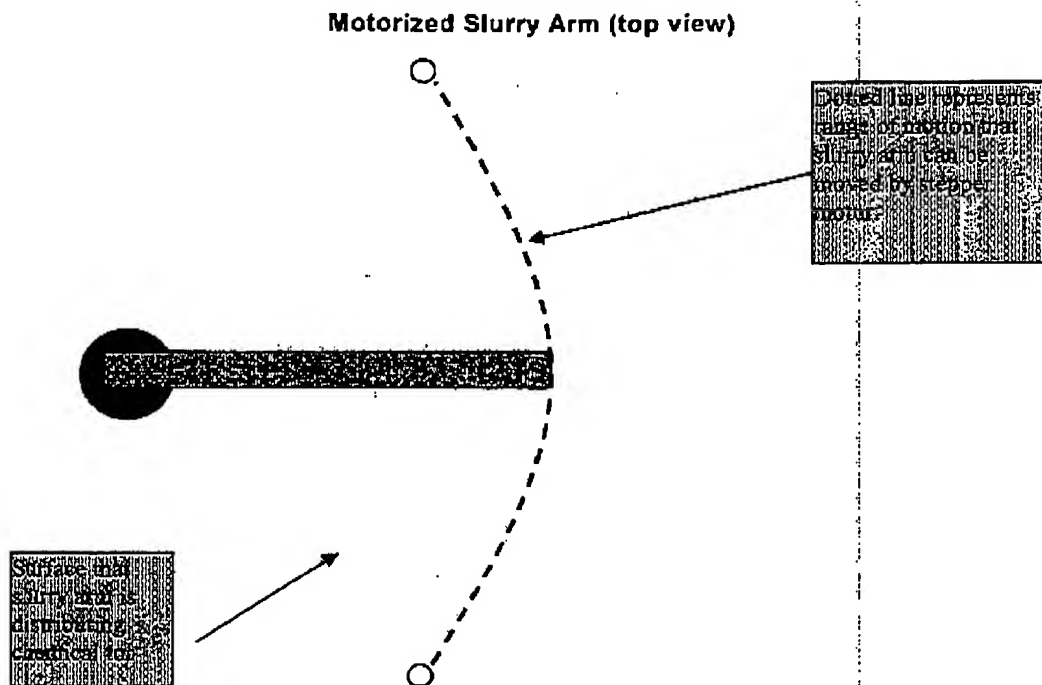
Top View



Motorized Slurry Arm (side view)



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4. **Value of your invention to Intel (how will it be used?).**
This invention could be used in any CMP process and any semiconductor wafer manufacturing.
5. **Explain how your invention is novel. If the technology itself is not new, explain what makes it different.**
Ability to modulate slurry arm position while in process as a process parameter input variable.
6. **Identify the closest or most pertinent prior art that you are aware of.**
None.
7. **Who is likely to want to use this invention or infringe the patent if one is obtained and how would infringement be detected?**

**HAVE YOUR SUPERVISOR READ AND FORWARD IT ELECTRONICALLY
VIA E-MAIL TO "INVENTION DISCLOSURE SUBMISSION"**

DATE: _____ SUPERVISOR: _____

BY APPROVING, I (SUPERVISOR) ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THIS
DISCLOSURE, AND RECOMMEND THAT THE HONORARIUM BE PAID

Exhibit I

Patent Disclosure Form - Slurry Arm (2) - Microsoft Word

Patent Disclosure Form - Slurry Arm (2) Properties

General Summary Statistics Contents Custom

Created: Friday, September 20, 2002 4:46:00 AM
 Modified: Monday, October 03, 2005 12:34:23 PM
 Accessed: Monday, October 03, 2005 12:56:34 PM
 Printed: Friday, September 20, 2002 4:46:00 AM

Last saved by: Colby House
 Revision number: 10
 Total editing time: 75 Minutes

Statistics:

Statistic name	Value
Pages:	5
Paragraphs:	135
Lines:	304
Words:	944
Characters:	5211
Characters (with spaces):	6134
Bytes:	22016

Rev. 16, 50%

INTEL INVENTION
ATTORNEY-CLIENT PRIVILEGE
 (located at <http://legal.intel.com>)

DATE _____

It is important to provide accurate and detailed information your invention for possible filing as a patent application. An electronically via email to your manager/supervisor with email account "invention disclosure submissions." If you have

☐ Last Name: House First Name: _____
 Title Phone Number: 603-613-6310 Email Fax Number: _____
 E-mail address: Colby.House@intel.com
 Citizenship: U.S. Are you a contractor? _____
 Home Address: 2582 Hillside Avenue
 City: Hillsboro State: OR
 Corporate Level Group: Division: _____
 Supervisor: Bramwell Thomas WWID: 100

Page 1 Sec 1 1/5 At 0.4 In 1 Col 1

start

Namiki, James J.

From: House, Colby J [colby.j.house@intel.com]
Sent: Monday, October 03, 2005 1:37 PM
To: Namiki, James J.; Liu, Heng
Subject: RE: Patent Application for Slurry Arm Invention

James,

See below for date of disclosure date received (Feb 11, 2003):

Legal Web Site - Patent Database Information Center - Microsoft Internet Explorer					
http://legal.intel.com/patent/Queries/zxdesc_list.asp?wwwid=10638266					
Intel Legal Home					
LGA Quick Links What's New Education Legal Hotline Circle					
Disclosure Status					
Disclosure Status for COLBY HOUSE (10638266)					
Committee	Disclosure Number	Disclosure Title	Date Received	Status	
TMG/PROCESS	45919	DRYER BOX	6/19/2005	TO BE PUBLIS	
TMG/PROCESS	45324	METHOD OF CLEANING WAFERS FOR THE MANUFACTURE OF SEMICONDUCTOR DEVICES	6/2/2005	TRADE SECRE	
TMG/PROCESS	33792	METHOD OF INCREASED RUN RATE AND THROUGHPUT UTILIZING MULTISURFACE POLISH PAD DURING CHEMICAL MECHANICAL POLISH	9/4/2003	DECLIN	
TMG/PROCESS	31010	POLISH PAD WITH CENTERING WINDOW	4/13/2003	DECLIN	
TMG/PROCESS	30757	SOFTWARE PROGRAMMABLE SLURRY DISPENSE ARM FOR OPTIMIZING CMP PROCESS	3/30/2003	PUBLIS	
TMG/PROCESS	31110	PROGRAMMABLE MULTIPLEXED SLURRY ARM WITH OR WITHOUT PRECISION DISPENSE NOZZLE	3/11/2003	PENDIN	

**SCHWABE
WILLIAMSON
& WYATT**

 P.C.
ATTORNEYS AT LAW

NEW CLIENT/MATTER FORM

Date 04/23/2003 Prepared by af

EXISTING CLIENT

CLIENT INFORMATION

Client Model	110348	Client #	110348
Client Name 1	INTEL LEGAL - PPG/TMG-PROCESS		
Client Name 2			
Address Line 1	INTEL CORPORATION		
Address Line 2	DAVID SIMON		
Address Line 3	CHIEF PATENT COUNSEL		
Address Line 4	C/O MALOU DE LEON, SC4-203		
Address Line 5	2200 MISSION COLLEGE BLVD		
Address Line 6	SANTA CLARA, CA 95052		
City	SANTA CLARA	State	CA
Zip	95052	Country	
Intern'l Prefix	Phone # (408) 765-6886		
Fax #	SS/Tax ID.		
Contact Name	Contact Title		
Dom/Int'l D	Add To Timekeeper's Contact List <input checked="" type="checkbox"/>		

MATTER INFORMATION

Matter Model	110348-132026	Matter #	WFM_113198
Matter Description	P16696 - PROGRAMMABLE MOTORIZED SLURRY ARM WITH		
Additional Desc.	OR WITHOUT PRECISION DISPENSE NOZZLE		
Additional Desc.			
Department	BUSN	Business & Corporate	
Practice	110 PT	Patents and Trademarks	
Primary Billing Atty.	TFH	Timothy F Haslach	
Location	01	Portland	
Supervising Atty.	JKL	Klindtworth, Jason K	
Court/Case #	Date of Service		
Claim #	Date of Injury/Date of Loss		
Oposing Counsel			
Dom/Int'l	D		

 Exhibit IV

MATTER INFORMATION (continued)

Matter Address for billing purposes (if different from the client address)

Do not put Contact Name into "Address Line 1" field.

Address Line 1		
Address Line 2		
Address Line 3		
Address Line 4		
Address Line 5		
Address Line 6		
Intern'l Prefix	Phone #	Fax #
Matter Contact	Matter Contact Title	

RELATED PARTIES

[illegible]

BatchID	30925	04/24/2003	13:30
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Conflicts Search Action: #1

Brothers, Randi

04/24/2003

Possible Conflict	N
1. Conflicting Interests: The interests of the different groups may be in conflict, leading to competition or even conflict.	
2. Resource Allocation: Limited resources may be allocated differently, leading to disputes or conflicts.	
3. Communication Barriers: Misunderstandings or lack of communication can lead to conflicts.	
4. Power Imbalances: Unequal power distribution among groups can lead to conflicts.	
5. Goal Conflicts: Different goals or objectives of the groups may lead to conflicts.	
6. Structural Issues: The way groups are organized or structured can lead to conflicts.	
7. Personality Differences: Individual personalities or traits can lead to conflicts.	
8. Role Conflicts: Conflicting roles or responsibilities within a group can lead to conflicts.	
9. Norm Conflicts: Different norms or values held by different groups can lead to conflicts.	
10. Inter-Group Relations: The relationship between different groups can lead to conflicts.	

Conflicts Search Action: #2

Cliff, Michelle M.

04/24/2003

Approved <input type="checkbox"/>	Reason (explain how conflict was cleared)	

File Folder Request	Conflict Reviewed By:		
	Practice Group Conflict Review:	AuYeung, Al	04/24/2003

BUSINESS REVIEW INFORMATION

Add Client To New Contact List	Desc. of Client Business	
Referred by		
Address		
City/State/Zip	Phone #	
Add Referral Source to Contact List		
Anticipated Fees/Costs	Client's Obligation	
Retainer	Regular Billing M	Monthly
Fee Arrangement H	Hourly	
Contingency Fee Board Approval		
Contingency Fee Accounting Approval		
Fee Agreement/Engagement Letter		
If no, please explain		
Mandatory Credit Check Exception Request (State Reason)		
Check If You DO NOT Want Automatic Managing Partner's Welcome Letter Sent <input type="checkbox"/>		

BILLING INFORMATION

Use Billing Format #	
Other Reference (please specify)	

Special Billing Rates (other than normal computer rates) ☐ All Matters for this Client
☒ This Matter Only

Timekeeper	St. Rate	Rate	Title	Rate

Please continue to the next pageto Records Information section.

Special Rate Approval

APPROVAL & FINALIZATION

Practice Group Approval Cliff, Michelle M. Date 04/24/2003

Record Center Signature Cliff, Michelle M. Date 04/24/2003

The program will use the Autonumbering system method to assign new Client Number. If you wish to change this, please enter the Client Number into the appropriate field. Please also enter the Matter Number and press the "Save Data" button.

Client Number: 110348

Matter Number: 133033

Assign Client Number: 110348

Assign Matter Number: 110348-133033

04/24/2003 15:18

RECORDS INFORMATION

Number
of folders 1

Folders	bar code
1	
2	

Inserts	folder
1	21
2	22
3	23
4	24
5	25
6	26
7	27
8	28
9	29
10	30
11	31
12	32
13	33
14	34
15	35
16	36
17	37
18	38
19	39
20	40

Page 1

NAME SANCHEZ, INTEL CORPORATION

04/14/03
BATCH: 30925

SOURCE PATTERN: 8888

NO HITS FOR

Batch Number: 30925

Date	Client	Attorney	Hours	Amount	Description	Invoice #	Case #
05/27/2003	PJF	Paul J Fordenbacher	6.75	1,350.00	Review invention disclosure, drafting patent	110348-133033	4131741
02/06/2004		Invoice=874739	0.00	0.00	application		
05/28/2003	PJF	Paul J Fordenbacher	4.25	850.00	Continue drafting patent application	110348-133033	4131743
02/06/2004		Invoice=874739	0.00	0.00			
05/29/2003	PJF	Paul J Fordenbacher	8.33	1,666.00	Continue drafting patent application	110348-133033	4131744
02/06/2004		Invoice=874739	8.33	1,666.00			
05/30/2003	PJF	Paul J Fordenbacher	9.25	1,850.00	Continue drafting patent application	110348-133033	4131745
02/06/2004		Invoice=874739	9.25	1,850.00			
06/17/2003	PJF	Paul J Fordenbacher	3.25	650.00	Drafting patent application	110348-133033	4150224
02/06/2004		Invoice=874739	3.25	650.00			
06/25/2003	PJF	Paul J Fordenbacher	2.00	400.00	Application preparation, submit first draft for	110348-133033	4156553
02/06/2004		Invoice=874739	2.00	400.00	review		
08/11/2003	ATA	Aloysius T (Al) AuYeung	3.50	1,242.50	Reviewed and revised patent application	110348-133033	4223304
02/06/2004		Invoice=874739	3.50	1,242.50			
09/16/2003	ATAW	Aloysius T (Al) AuYeung	1.25	443.75	Revised patent application	110348-133033	4227122
02/06/2004		Invoice=874739	1.25	443.75			
09/17/2003	ATA	Aloysius T (Al) AuYeung	1.00	355.00	Revised patent application	110348-133033	4227080
02/06/2004		Invoice=874739	1.00	355.00			
09/18/2003	ATA	Aloysius T (Al) AuYeung	0.50	177.50	Revised patent application	110348-133033	4227093
02/06/2004		Invoice=874739	0.50	177.50			
09/18/2003	RLS	Rachel L Bradfute	0.60	60.00	Prepare formal documents for inventor signature	110348-133033	4226860
02/06/2004		Invoice=874739	0.60	60.00			
10/28/2003	CJL	Christopher J Lewis	0.20	35.00	Followup with OR on status of application;	110348-133033	4261317
02/06/2004		Invoice=874739	0.20	35.00			
01/13/2004	ATA	Aloysius T (Al) AuYeung	0.50	177.50	Verified formal drawings	110348-133033	4327519
02/06/2004		Invoice=874739	0.50	177.50			
01/22/2004	ATA	Aloysius T (Al) AuYeung	0.50	187.50	Services in connection with filing	110348-133033	4328125
02/06/2004		Invoice=874739	0.50	187.50	non-provisional patent application		
01/22/2004	HLA	Heather L Adamson	0.75	82.50	Service in connection with filing Patent	110348-133033	4324891
02/06/2004		Invoice=874739	0.75	82.50	Application, including preparing and filing		
					transmittal package, and post-filing processing		
05/03/2004	HLA	Heather L Adamson	0.10	11.00	Service rendered in connection with reviewing	110348-133033	4420259
06/07/2004		Invoice=885299	0.10	11.00	and processing Filing Receipt		
08/12/2004	HLA	Heather L Adamson	0.10	11.50	Service rendered in connection with reviewing	110348-133033	4508374
09/08/2004		Invoice=893301	0.10	11.50	and processing Notice of Recordation of		
					Assignment		
02/17/2005	HLA	Heather L Adamson	0.25	30.00	Service in connection with reviewing and	110348-133033	4685881
03/09/2005		Invoice=908471	0.25	30.00	processing Office Action, and uploading and		
					updating CPA		
03/02/2005	ATAW	Aloysius T (Al) AuYeung	0.25	100.00	Services in connection with receipt of office	110348-133033	4700360
05/09/2005		Invoice=913918	0.25	100.00	action, including Initial review of the same		
04/12/2005	MMC	Mark McClure	4.00	720.00	Review office action; review cited prior art;	110348-133033	4741367
05/09/2005		Invoice=913918	4.00	720.00	review claimed invention; map cited art against		
					claimed invention		
04/13/2005	MMC	Mark McClure	7.50	1,350.00	Review office action; review cited prior art;	110348-133033	4741370
05/09/2005		Invoice=913918	7.50	1,350.00	review claimed invention; map cited art against		
					claimed invention; draft response		
04/13/2005	YLC	Yvette L Christaden	1.10	99.00	Prepare base response to office action for	110348-133033	4743114
05/09/2005		Invoice=913918	1.10	99.00	attorney expansion		
04/15/2005	ATA	Aloysius T (Al) AuYeung	0.50	200.00	Reviewed and revised response to office action	110348-133033	4743736
05/09/2005		Invoice=913918	0.50	200.00			

Billed and Unbilled Recap Of Time Detail - [110348-133033 - P16696 - PROGRAMMABLE MOTORIZED SLURRY ARM WITH]

Page 2

Client:110348 - INTEL LEGAL - PPG/TMG-PROCESS 10/3/2005 3:14:56 PM

Date	Name	Time	Amount	Description	Case No.	Amount
04/16/2005	MMC Mark McClure	0.80	144.00	Review and revise response	110348-133033	4741275
05/09/2005	Invoice=913918	0.80	144.00			
04/18/2005	YLC Yvette L Christensen	0.30	27.00	Services in connection with preparation of	110348-133033	4743125
05/09/2005	Invoice=913918	0.30	27.00	response to office action and accompanying		
				documentation for filing		
04/18/2005	ATA Alaykus T (Al) AuYeung	0.25	100.00	Services in connection with filing response to	110348-133033	4749108
05/09/2005	Invoice=913918	0.25	100.00	office action		
	BILLED TOTALS: WORK:	57.78	12,319.75	26 records		
	BILLED TOTALS: BILL:	46.78	10,119.75			
	GRAND TOTALS: WORK:	57.78	12,319.75	26 records		
	GRAND TOTALS: BILL:	46.78	10,119.75			

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